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BERTRAM P. BROWN, M.D., Director

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GUY P. JONES
EDITOR

Nutrition and National Defense

Under the above title, Dr. H. Borsook of the California Institute of Technology at Pasadena discussed the importance of nutrition as a measure of national defense before the Department of Health Officers of the League of California Cities at San Diego, September 18.

He stated: "In mechanized warfare 6 to 18 men must work at home for every man stationed in the first line of defense. The whole fabric of our industrial organization, the backbone of our national defense, depends upon the productive effort of these men and women of America. To make this effort as effective as possible, the modern knowledge of nutrition can make a major contribution whose benefits will remain long after the present crisis has passed."

Dr. Borsook holds that the people of the United States are not well nourished and accordingly suffer from many avoidable illnesses, and that if the newer knowledge of nutrition were used it could make us taller, stronger, healthier and longer lived. He stated: "The amount of vitamin B₁ (250 I. U. daily) is barely sufficient to prevent beri-beri with no margin of safety. The amount of vitamin A (3,000 I. U. daily) is barely adequate for normal vision in dim light. There is only barely enough protein (45 mg. daily) to prevent loss of body protein, and the iron (10 mg. daily) is so low that it may be insufficient to prevent anemia."

He stated further: "There are reports that aviators

of the Royal Air Force are given large amounts of vitamins A and D in the form of concentrates, presumably to make certain that their vision will be good as it can be made. These young men report that they enjoy, as a result, a general tonic effect. Their appetites are better. They feel better. I have good reason to believe from a personal communication that the diet of the German Army has been designed by nutrition experts, that modern scientific knowledge of nutrition has been used, and that it is fortified with vitamins.

"Modern processes remove the vitamins and minerals from wheat, corn, and sugar in the milling and refining. Today less than 10 per cent of the vitamin B complex in the wheat grown in this country is actually eaten by human beings, although subclinical vitamin B deficiency is widespread in all economic classes.

"The nutrition group at the California Institute of Technology has been devoting itself to the problem of practical ways and means of improving the nutrition of the nation. We are of the opinion that there is only one really effective and certain way of doing this. It is also the cheapest and the easiest way. This is to add vitamins and minerals to such staple foods as flour, corn meal, and sugar and to some canned and bottled foods, at the source where these foods are processed. These must be added in measured amounts, under government regulation, and

subject to government inspection. Specifically what is needed is,

1. Authorization of a government body to be concerned solely with nutrition. This body should consist of:

- (a) A commission of competent nutrition experts and scientific representatives of the military branches and of the different government departments concerned. This commission will set up standards, determine the extent to which vitamins should be added to foods, and deal with related matters; and

- (b) An administrative division headed by a qualified executive director with the power to carry out the policy of the commission.

"An outline of a national nutrition program based on the policy of fortification was forwarded by our group to Washington on June 15 of this year, followed by certain addenda. The plan is practical, simple, and inexpensive. It is a plan which aims at providing an optimum diet for the whole nation, at providing the nutritional basis of the highest attainable physiological state in our people. Our policy may be stated in these sentences. Tap water has been made safe by the efforts of public health authorities and everyone knows it is safe. The food products supervised by a competent national nutrition authority would merit the same public confidence, because of the assurance in the public mind that the requirement of nutritional essentials was being satisfied automatically and inescapably.

"Some have suggested that education in eating habits is the answer to the problem. The United States Department of Agriculture has for years been carrying on excellent work along these lines. It has had some measure of success. The per capita consumption of milk is today two to three times what it was 50 years ago, yet even today calcium deficiency is widespread. In the last 15 years the increase in milk consumption has been only 4 per cent. Have we time now with a national emergency, with the country mobilizing all its resources to meet this emergency, for a policy which can at best bring results only after many years of effort? Public education is a very slow process.

"We must act first, with an effective national nutrition policy. This is in the best tradition of public health work. Would tap water be as safe as it is today if the application of the new knowledge of bacteriology had consisted mainly in an educational campaign to boil all drinking water? I imagine it would have sounded fantastic if it had been suggested in 1881 that the best way to make water safe to drink is to install great filtration plants and sedi-

mentation beds, when the simple measure of boiling water would make it as safe.

"The policy of fortifying foods with dietary essentials is not a new, revolutionary policy. We have grown accustomed now to the fortification of salt with iodides in order to reduce the incidence of goitre. More recently vitamin A has been added to margarine in order to raise its nutritional value toward that of butter. The same arguments that today are and will be raised against fortifying flour with the vitamin B complex were raised against the addition of iodine to salt and of vitamin A to margarine. I have not time to discuss these today, but I will say that none of them can be sustained on scientific or economic grounds.

"You will want to know how much this policy of fortification of foods with adequate amounts of dietary essentials is going to cost. Let me give you an actual illustration of how little it need cost. A friend of mine with relatives in England asked our nutrition group for advice on what he could send to tide his relatives over the serious food situation which is expected in England this winter.

"We were able to draw up a small list of food materials which supplied abundant amounts of the dietary essentials—first-class protein, calcium, phosphate, iron, vitamins A, the B complex, C and D. These dietary essentials, with some fat, any available protein, and any carbohydrate for calories will supply his relatives with a first-class diet from a nutritional point of view. The essentials will cost him (without transport) $7\frac{1}{2}$ cents a day per person.

"If the policy of fortification of foods which we have proposed is adopted and put into effect on a national scale, optimum amounts of dietary essentials would cost much less than $7\frac{1}{2}$ cents a day per person. Our nutrition group has been able to make some study of the cost and it appears that if the program were carried through on a national basis the vitamins will cost approximately \$1 per person per year. This figure is so low that I have reason to believe that the food industries could absorb the cost themselves without passing it on to the consumer.

"A short time ago the British government appointed a 'Scientific Food Committee.' Within five weeks the committee had formulated a national nutrition policy and this policy was translated by the government of Great Britain into national action. The British national nutritional policy is based on the principle of fortification. Vitamin B₁ and calcium are added to flour. The decision to add calcium is especially important because it is a dietary essential which is not present in appreciable amounts in flour, white or whole wheat. Flour happens to be the

most convenient vehicle for this particular supplement.

"The result is that the whole nation obtains an increased intake of these two dietary essentials, automatically and inescapably, without change in color, taste, or processing of the food. No mention is made of increased cost to the consumer. The public is not asked to change its eating habits; millers and bakers are not asked to change their processes.

"It is a well established practice to exchange military observers with other countries, especially when there is a war. This practice is now extended to civilian experts in industry and commerce. The policy of the fortification of a staple food for the whole nation recently adopted by the British government is an historic event in public health. It concerns us vitally. It is highly desirable that we send competent nutrition observers abroad so that we may have the benefit of a close, continuous and objective study from the very beginning of the operation of this undertaking, which is the first of its kind in which the government of a great country by deliberate plan and measure seeks to improve the nutrition of the whole nation, without calling on the individuals of that nation to do anything. The improvement in their diet will be automatic and, so long as they eat bread, inescapable. This is sound applied science; it is also biological engineering on a grand scale.

"Today the public health officers of the city of London are working to prevent epidemics and starvation. Their problems are the primitive ones of a struggle for survival. Their work is among ruins and in cellars.

"That this horror shall not befall us we are going to make an unprecedented expenditure, not only of our money, but of ourselves in public service. We are just beginning. The stress of the demand for increased production will grow on workers, executives, and government officials. We can put to good use, in the building of our national defenses, all our reserves of health and strength.

"Is it not time then for a national nutrition policy for the United States, for a competent government body to be concerned solely with nutrition? So, just as we are now organized to use all our knowledge of science and technology in the construction of engines of warfare, we shall also use modern science and technology for the lasting improvement of the health of the men and women of America."

Senility is not an important cause of death in California. There were but 149 deaths due to this cause in 1937, and 161 deaths in 1936.

BEWARE OF ITINERANT RAT CONTROL WORKERS

Advices from an eastern organization indicate that itinerant rat control operators are perpetrating frauds in many cities of eastern states. The procedure is outlined as follows:

The operator first interviews the responsible health official, displaying a portfolio of testimonial letters from officials in other parts of the country. He then offers to rid garbage dumps, or other city property, of rats without charge, and obtains a routine letter on official stationery authorizing control work. After securing this endorsement, he represents the activity as a community cause, cooperative in nature, with the implications that it is actually conducted by the local health department.

He then proceeds to collect from business firms and residents their share of the cost of the required chemicals and labor supposed to have been used in the rat extermination campaign. Contributions requested range from a few cents to several dollars or to as much as \$87.50 from promising prospects.

The promoter emphasizes that one characteristic of the baiting material is that complete results are not to be expected for several weeks. By this time, collections having been made, the promoter departs permanently, leaving no forwarding address. Health officers of California are requested to watch for this type of activity and report it at once to the nearest Better Business Bureau.

DEMAND FOR BIRTH CERTIFICATES CONTINUES

The unprecedented demand for certified copies of birth certificates continues without interruption. Local registrars of vital statistics, as well as the State Bureau of Vital Statistics are overwhelmed with the flood of requests continually received.

The removal of the State Bureau of Vital Statistics from the State Office Building in Sacramento to 631 Jay Street has further delayed services in the provision of birth certificates.

The demand for proofs of age is found in every bureau of vital statistics throughout the United States. In some places assistance through WPA projects has been secured.

Every effort is being made in California to supply this unprecedented demand and it is hoped that within the next few weeks the mass of requests now on hand may be cleared.

Safeguard the health both of body and soul.—
Cleobulus.

MORBIDITY

Complete Reports for Following Diseases for Week Ending
November 2, 1940

Chickenpox

295 cases: Berkeley 3, Oakland 2, Contra Costa County 2, Crescent City 12, Fresno County 5, Eureka 20, Kern County 18, Bakersfield 1, Hanford 10, Los Angeles County 18, Burbank 2, Compton 1, Glendale 5, Glendora 1, Long Beach 1, Los Angeles 18, Monrovia 1, Pasadena 14, Pomona 6, Santa Monica 2, Whittier 6, Lynwood 1, Hawthorne 1, Monterey Park 1, Madera County 14, Madera 1, Monterey County 10, Salinas 1, Santa Ana 4, Riverside County 2, Banning 24, Beaumont 1, Blythe 1, Sacramento 2, San Diego County 2, San Diego 6, San Francisco 19, San Joaquin County 3, Stockton 5, Tracy 10, San Luis Obispo County 1, Redwood City 4, Belmont 2, Santa Barbara County 3, Lompoc 1, Santa Barbara 1, Santa Clara County 1, Santa Cruz County 1, Benicia 2, Stanislaus County 2, Patterson 5, Tulare County 10, Lindsay 1, Ventura County 2, Santa Paula 1, Davis 2.

Diphtheria

19 cases: Calaveras County 4, Kern County 1, Los Angeles County 1, Orange 1, Banning 1, Riverside 1, Sacramento 3, San Bernardino 2, San Diego 1, San Francisco 1, Siskiyou County 1, Tulare County 2.

German Measles

16 cases: Oakland 1, Los Angeles County 1, Glendale 1, Long Beach 1, Los Angeles 5, Pasadena 1, La Habra 1, Sacramento 2, San Diego 2, Stockton 1.

Influenza

14 cases: Fresno County 1, Los Angeles County 1, Los Angeles 4, Montebello 1, Sacramento 1, San Diego 3, San Francisco 1, Santa Barbara 1, Santa Clara County 1.

Malaria

5 cases: Butte County 1, Fresno County 1, San Joaquin County 1, Yuba City 1, Winters 1.

Measles

33 cases: Hayward 1, Oakland 2, San Leandro 1, Fresno County 1, Westmoreland 1, Kern County 2, Bakersfield 3, Los Angeles County 3, Los Angeles 4, Pomona 1, Monterey County 1, Corona 1, Ontario 1, San Diego 1, Stockton 2, San Luis Obispo County 2, Santa Barbara County 4, Santa Barbara 1, Dinuba 1.

Mumps

245 cases: Alameda 1, Oakland 3, Fresno County 14, Fresno 1, Kern County 11, Hanford 1, Los Angeles County 25, Compton 1, Culver City 1, Glendale 5, Huntington Park 2, Long Beach 19, Los Angeles 17, Santa Monica 1, Whittier 1, Torrance 1, Hawthorne 1, South Gate 1, Mono County 1, Monterey County 1, Nevada County 11, Grass Valley 28, Orange County 8, Anaheim 1, Fullerton 20, Huntington Beach 20, Orange 1, La Habra 3, Corona 1, San Jacinto 1, Indio 1, Sacramento 1, San Diego County 1, San Diego 8, San Francisco 8, Paso Robles 6, Burlingame 1, Santa Maria 4, Santa Clara County 1, Santa Cruz County 1, Tulare County 2, Dinuba 1, Ventura County 3, Ventura 2, Davis 1, Woodland 1, Yuba County 1.

Pneumonia (Lobar)

40 cases: Oakland 1, Fresno County 3, Coalinga 1, Fresno 1, Los Angeles County 5, Azusa 1, Compton 1, Los Angeles 8, San Fernando 1, Torrance 1, Anaheim 1, Orange 1, Sacramento County 3, Sacramento 6, San Francisco 1, Stockton 4, Ventura County 1.

Scarlet Fever

79 cases: Alameda County 1, Fresno County 2, Kern County 7, Bakersfield 1, Hanford 1, Los Angeles County 12, Huntington Park 1, Inglewood 1, La Verne 1, Long Beach 2, Los Angeles 12, Montebello 2, San Gabriel 1, Santa Monica 1, Sierra Madre 1, Vernon 1, Lynwood 1, Hawthorne 2, South Gate 2, Orange County 2, Santa Ana 3, Seal Beach 1, Plumas County 1, Sacramento 3, Ontario 1, San Diego County 1, San Diego 3, San Francisco 5, Stockton 3, Shasta County 1, Modesto 2, Woodland 1.

Smallpox

One case: Benicia.

Typhoid Fever

7 cases: Piedmont 1, Colusa County 1, Kern County 2, San Joaquin County 1, Siskiyou County 1, Tulare County 1.

Whooping Cough

321 cases: Berkeley 10, Oakland 20, Contra Costa County 4, Fresno 1, Los Angeles County 52, Alhambra 2, Compton 1, El Segundo 1, Huntington Park 2, Long Beach 6, Los Angeles 33, Pomona 7, San Fernando 1, Santa Monica 2, Hawthorne 2, Gardena 2, Marin County 1, Monterey County 3, King City 2, Monterey 2, Pacific Grove 1, Orange County 10, Fullerton 1,

Santa Ana 10, Tustin 3, La Habra 2, Blythe 2, Corona 1, Sacramento 1, Chula Vista 5, Oceanside 3, San Diego 3, San Francisco 46, San Joaquin County 4, Stockton 6, San Luis Obispo County 24, Paso Robles 2, San Luis Obispo 17, Santa Barbara County 2, Santa Barbara 2, Santa Clara County 4, Shasta County 2, Stanislaus County 1, Dinuba 4, Ventura County 8, Ventura 3.

Meningitis (Epidemic)

2 cases: Los Angeles County 1, Lynwood 1.

Dysentery (Amoebic)

3 cases: Ontario 2, San Francisco 1.

Dysentery (Bacillary)

22 cases: Oakland 1, Inyo County 1, Los Angeles County 5, Los Angeles 10, San Joaquin County 2, Santa Clara County 3.

Pellagra

2 cases: Los Angeles 1, Santa Barbara County 1.

Poliomyelitis

9 cases: Berkeley 1, Los Angeles County 4, Long Beach 1, Los Angeles 2, Gardena 1.

Encephalitis (Epidemic)

No cases reported.

Tetanus

3 cases: Los Angeles County 2, Tulare County 1.

Trachoma

3 cases: Oakland 1, Tulare County 2.

Typhus Fever

One case: Los Angeles County.

Food Poisoning

13 cases: Oakland 1, Fresno 4, Monterey 1, San Francisco 1, Yolo County 6.

Undulant Fever

9 cases: Fresno County 1, Kern County 3, Los Angeles County 1, Covina 2, Los Angeles 1, Watsonville 1.

Tularemia

One case: Fresno County.

Coccidioidal Granuloma

3 cases: Fresno 1, Kern County 2.

Septic Sore Throat

4 cases: Kern County 1, Bakersfield 3.

Epilepsy

30 cases: Berkeley 2, Oakland 2, Fresno 1, Los Angeles County 3, Long Beach 1, Los Angeles 16, Perris 1, San Francisco 4.

Rabies (Animal)

11 cases: Contra Costa County 1, Imperial County 1, El Centro 1, Los Angeles County 1, El Segundo 1, Riverside 3, Palo Alto 1, Porterville 2.

Men that look no further than their outsides, think health an appurtenance unto life, and quarrel with their constitutions for being sick; but I that have examined the parts of man, and know upon what tender filaments that fabric hangs, do wonder that we are not always so; and considering the thousand doors that lead to death, do thank God that we can die but once.—Sir T. Browne.

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